Does Gender Matter?
Evidence from Investor Behavior in Indonesia Capital Market

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Abstract:- This study aims to examine the heuristic behavior of male investors (availability, representativeness, and hindsight) in Indonesia on the formation of technical anomalies in the capital market. The results obtained from 316 male investors prove that availability is not the cause of the formation of technical anomalies in the capital market, but that representativeness and hindsight have a positive effect on the occurrence of technical anomalies in the capital market. This study is the first study conducted by focusing on men as the object of research related to research that discusses heuristics and technical anomalies. The results of mediation exploration which were used as additional testing found that technical anomalies were unable to explain the relationship between availability variables and investment performance, but technical anomalies partially mediated the relationship between representativeness, hindsight and investment performance.

Keywords:- *Component; Behavioral Finance; Capital Market, Investment Performance; Heuristics.*

I. INTRODUCTION

Behavioral finance is a science that can provide alternative explanations for any anomalous events that cannot be explained by traditional financial theory. Traditional financial theory is based on the assumption that market participants are rational people who can process all market information accurately [1]. On the other hand, behavioral finance assumes that market participants are actually not completely rational but are influenced by various psychological and emotional factors which ultimately make them act irrationally in making decisions.

Over the last few years, research related to behavioral finance has explored the relationship between behavioral bias, Big Five Personality and investment performance for both individual investors and institutional investors. Academics and capital market practitioners are interested in this research topic because this topic has great academic value and practical implications for industry and the investment world. Economic theory based on the results of previous research shows that individuals act differently based on their preferences in making investment decisions. The preferences obtained are closely related to emotions and moods [2]; behavioral bias [3]; sources of investor information [1] and heuristic behavior; [4]; [5].

The psychographic model developed by [6] is a behavioral financial model that classifies individuals according to characteristics, tendencies, or other behaviors. Unfortunately, this model has not taken into account the gender factor even though in terms of investment, men and women have different thoughts that will lead them to behave differently [7]; [6]; and [8]. This research is important so that investors can understand their own investment behavior and make better decisions. Furthermore, this research is expected to be able to complement the psychographic model, with a focus on examining individuals based on certain genders.

The debate over the efficient market hypothesis (EMH) has inspired many academics to prove whether certain types of markets are actually efficient. Several studies related to behavioral finance found the emergence of several anomalies in the market that refute the theory (EMH). One of the anomalies that exist in the capital market can be formed by simplifying behavior (heuristics) by investors [9]; [5]; and [10] found that there are three types of anomalies in the capital market: Fundamental Anomalies, Technical Anomalies, and Calendar Anomalies. [11] define heuristics as a form of rule of thumb, which individuals use in situations of uncertainty in making simple and efficient decisions. Furthermore, [12] distinguishes heuristics into three, the tendency to use available information (availability), simplification of the decision-making process related to experience (hindsight) and behavior that is too easy to judge something as a reflection of a represented group (representativeness).

Researchers observe the behavior of investors in Indonesia who are members of several telegram groups. The phenomenon that was found was that most of them (including those who participated in this study) were novice investors as many as 181 respondents (56.7%). With limited experience in buying and selling shares, investors often use technical analysis and base their decision making on news spread in the group or based on the opinion of someone who is considered superior.

Research related to investor behavior continues to grow, several previous studies have proven that gender differences can also make someone have different behavior in making decisions in the capital market. One of the pioneering and impactful studies that examines gender and behavior including [6] this study proves that men have a higher level of overconfidence than women, this can be seen from their trading behavior, men trade on average on average 45% more than women and moreover unmarried men trade 67% more than unmarried women.

Previous research has also found that men are less likely to make mistakes when trading because men analyze their portfolios more often. In addition, men are faster to cut off when experiencing losses, this will also eventually cause male investors to be satisfied with their investment performance [10]. The current study that explores how simplification behavior (heuristics) can lead to anomalies and how it relates to the investment performance of the majority of investors is carried out on a general sample of investors rather than focusing on a specific gender. Research conducted by [9]; [5] have not been able to provide sufficient evidence that heuristic behavior based on a certain gender can cause anomalies in the capital market and can affect their investment performance.

To the researcher's knowledge, this study is the first study that aims to determine whether the heuristic behavior of male investors (availability, hindsight, representativeness) will cause anomalies in the capital market and will ultimately affect their investment performance. Furthermore, this research uses the SEM (Structural Equation Modeling) method with the help of the WarpPLS analysis tool. The variance accounted for (VAF) method was also carried out as an additional test, in order to explore whether technical anomalies were able to mediate the effect of heuristics on investment performance, although mediation testing was not included in the main objective of the study.

This study confirms that the heuristic behavior of male investors is one of the factors causing the formation of technical anomalies in the capital market, except for the availability variable. The results of the mediation exploration support the findings of [9] namely that the technical anomalies variables formed due to heuristic behavior of investors can partially mediate the relationship between hindsight behavior and investment performance. On the other hand, technical anomalies cannot explain the relationship between availability and representativeness behavior on investment performance. This study also proves that the technical anomalies formed by the heuristic behavior of male investors have a positive effect on their investment performance, in other words male investors are able to take advantage of anomalies in the capital market in the right way so that they are satisfied with their investment performance. This finding supports previous studies which found that male investors tend to be satisfied with their investment performance [10]; [11].

In the end, this research contributes to the literature and provides investors in Indonesia with an understanding to understand how to make the decision-making process better. In addition, this research is expected to provide information

accompanied by evidence that some anomalies that have been considered negative in the capital market can actually have a positive impact on investors' investment performance, but with a note that investors must use simplification behavior in the capital market appropriately.

II. LITERATURE REVIEW

A. Heuristics

Psychological studies related to heuristic behavior were originally carried out by [13] They found the phenomenon that most people tend to use mental shortcuts or more practical strategies in making decisions with a high level of uncertainty. On the other hand, traditional financial theories explain that to make a decision an individual must have complete information, data, and analysis beforehand. This traditional financial theory is also supported by several findings, including a study conducted by [6] which found that investors who behave heuristically tend to make mistakes in their decision making, for example selling winners' shares too quickly and holding losers' shares too long. In the capital market, decisions are often made using a simplification process or mental shortcuts due to cognitive limitations and limited information held by individual investors. Heuristic behavior is divided into three, namely the tendency to use only available information in decision making (availability), the behavior of simplifying the decision-making process with past experience (hindsight) and behavior that is too easy to judge something as a reflection of a group it represents (representativeness) [14].

People rely on the ease with which past experiences or information can be brought to mind to assess the likelihood of an event [13]. Availability behavior is often found in the capital market and encourages investors to have under-reaction or over-reaction expectations of stock prices. [4]. The phenomenon of hindsight bias refers to a person's tendency to believe that he or she can predict the future or an event in the future based on the last event that happened to him. After an event takes place, it tells me that I already knew (because it's also called the knew-it-all-along effect).

B. Technical Anomalies

The debate in the investment world that discusses past security prices, and the use of technical analysis assistance whether it can be used to predict future security prices is not yet conclusive. According to [10] technical analysis is a collection of a number of techniques that try to predict security prices by studying their past prices. Market analysis using charts or charts was first performed in Japan in the 1600s. Some of the literature that has discussed the use of technical analysis has not provided a consensus on whether technical analysis can be profitable or not [11]. Determination of stock prices in the capital market is closely related to the Efficient Market Hypothesis theory developed by [12], this theory concludes that stock prices will automatically reflect all relevant information. On the other hand, the concept of forming a technical anomalies is in stark contrast to the Efficient Market Hypothesis theory. [10] explains that the formation of technical anomalies is due to the inconsistency of technical analysis with the Efficient Market Hypothesis

theory, or in other words, technical anomalies in financial trading instruments are caused by elements of technical analysis used by investors as a tool for decision making. Efficient Market Hypothesis.

C. Investment Performance

The measurement of investment performance in this study is based on the perception of male investors on investment satisfaction, if investors are satisfied with their investments, it can be concluded that the investment performance of the person is good. On the other hand, a person's investment performance is said to be bad if the investor is not satisfied with his investment.

D. Hypothesis Development

1. Heuristics and Technical Anomalies

A person's tendency to behave heuristically in the capital market is to avoid the complexity of making a decision to buy/sell which shares will bring the greatest profit in the future. According to [10] availability is a person's behavior using rules of thumb that allow that person to estimate the probability of an outcome based on how common or familiar the outcome/event appears in their lives. According to [15] technical analysis is a method that analyzes patterns from price charts that occur repeatedly. By using technical analysis, investors use historical data and do not try to measure the intrinsic value of the stock, even though technical analysis alone is not enough to conclude that the stock is good or not. Therefore, when investors use technical analysis to select stocks, these investors tend to ignore the assumption of the efficient market hypothesis and in the end this activity results in technical anomalies in the stock market.

H1: Availability heuristics owned by investors have a positive effect on the formation of technical anomalies in the capital market.

Errors that will occur due to representativeness include the stereotyping process, namely people are too quick to draw conclusions based on their limited knowledge about the characteristics of a group, then this behavior can be carried away when someone becomes an investor in the capital market [14]. The nature of overconfidence in male investors sometimes makes them too trusting in the technical analysis they do and sometimes makes them forget to look back at the fundamental value of the stock. Therefore, the higher the representativeness behavior of an investor, the higher the probability of a technical anomalies in the capital market.

H2: Representativeness heuristics owned by investors have a positive effect on the formation of technical anomalies in the capital market

Various previous studies have proven that many events and events in the capital market can be of concern to investors and ultimately affect their decision making in stock transactions without further testing whether these events will indeed provide benefits in the future or not. Hindsight refers to a person's tendency to believe that he can predict the future or an event in the future based on the last event that happened to him. The study of [6] which proves that men are more likely to buy and sell shares when compared to female

investors, this is because male investors believe too much in their own abilities and believe they can beat the market. [11] adds that most investors, especially men, study and use technical analysis and believe that technical analysis will benefit them. Based on previous trading experience and the use of technical analysis, this will ultimately trigger the occurrence of technical anomalies in the capital market.

H3: Hindsight heuristics owned by investors have a positive effect on the formation of technical anomalies in the capital market

2. Technical Anomalies and Investment Performance

Technical analysis is an analytical technique that aims to predict stock returns by considering historical prices and volumes [5]. Based on the observations of the researchers, most of the investors who are members of the stock telegram group in Indonesia use technical analysis to maximize returns from buying and selling their shares. In addition, previous studies also found the presence of noise traders. [5] prove that these investors tend to overreact to good news or bad news by expecting to get a higher return, even if they fail to get the desired return they will remain satisfied with their performance. [11] and [9] prove that investors who use technical analysis in their investment assessments are satisfied with the returns they get.

H4: Technical anomalies have a positive effect on investment performance

III. RESEARCH METHODS

A. Sample and Data

The data used in this research is primary data and collected by using survey method. Respondents who fill out the questionnaire must meet several criteria and pass the screening including having a securities account with a securities company in Indonesia. The total respondents who participated were 316 male respondents and had passed the selection process from outliers.

B. Variable Measurement

The variables used in this study are availability, representativeness, hindsight, technical anomalies and investment performance. The indicators used are derived from several previous studies. Availability, representativeness, technical anomalies and investment performance variables refer to research by [5] while indicators for hindsight variables refer to research [16]. The scale used is Likert 1-5.

C. Analysis Method

The collected data were analyzed using Structural Equation Modeling with the help of the WarpPLS analysis tool. Before testing the hypothesis, the first approach is to test the measurement (assessing the quality of the model suitability and p-value, testing the validity and reliability of the construct). The second approach is structural model testing (assessment of coefficient of determination, predictive relevance, path coefficient and p-value, effect size for each path and scatter plot (linear and non-linear). Mediation exploration testing is carried out using the VAF (Variance Extracted For) method. The initial step that must be done

before testing the VAF value is to test the role of the mediator using the [17]. After getting the direct effect and indirect effect values, mediation testing using the VAF method can be done. The equations used in calculating the VAF method [18]:

$$\text{VAF:} \frac{Indirect\ Effect}{Total\ Effect} \rightarrow \text{VAF:} \frac{a*b}{ab+c} \qquad (1)$$

Conclusions for mediation are carried out with the following requirements if the VAF value is > 80% then full mediation. If the VAF value is > 20% and < 80% then the mediation is partial and if the VAF value is < 20% then there is no mediating effect.

IV.   RESULT

A. Respondent Background

There were 316 male respondents who participated in this study. The age of the respondents varied, the majority aged 30 40 years and 20 30 years with a number of 121 people (38.3%) and 117 people (37%). The remaining 64 people (20.3%) were aged 40 50 years, 9 people (2.8%) were over 50 years old and only 5 people (1.6%) were less than 20 years old. Furthermore, when viewed from the investment experience, the majority of respondents are novice investors who have less than 1 year of investment experience, as many as 178 people (56.3%) and the rest have 1-5 years of investment experience as many as 106 people (32%) and as many as 32 people (56.3%). 10.1%) who have more than 5 years of investment experience. The majority of respondents have a good educational history of 198 people (62.3%) with an undergraduate education background, 50 people (15.8%) with a master's degree and the rest with a high school background, 41 people (12.9%), D3 27 people (8.5%) and D1 as many as 3 people (0.9%). The majority of respondents who participated in this study worked as entrepreneurs, as many as 221 people (69.6%) and the remaining 74 people (22.8%) worked as employees and the remaining 25 people (7.6%) worked neither as employees nor as employees. entrepreneur.

B. Hypotheses Tesing

Before testing the hypothesis, the researcher first evaluates the quality and suitability of the model, as well as the p value. The results have met the criteria. The next test is to test the validity and reliability of the questionnaire. The results whose results can be seen in table below

TABLE I. Combined loading and cross-loading after deleting the indicators

	AV	RP	HI	TA	KI	P Value
AV1	(0,772)					<0.001
AV2	(0,772)					<0.001
RP1		(0,806)				<0.001
RP2		(0,806)				<0.001
HI2			(0,654)[b]			<0.001
HI3			(0,787)			<0.001
HI4			(0,764)			<0.001
TA1				(0,831)		<0.001
TA2				(0,831)		<0.001
KI1					(0,903)	<0.001
KI2					(0,884)	<0.001
KI3					(0,794)	<0.001

[b]Loading 0.4<x<0.7

TABLE II. Value of reliability parameters after deleting indicators

Indicators	*Average variance extracted* (AVE) after deleting the indicators
AV	0,597
RP	0,650
HI	0,544
TA	0,691
KI	0,743

TABLE III. Square roots AVE

	AV	RP	HI	TA	KI
AV	(0,772)				
RP		(0,806)			
HI			(0,737)		
TA				(0,831)	
KI					(0,862)

TABLE IV. Value of reliability after deleting the indicators

Indicators	*Cronbach's Alpha*	*Composite Reliability*
AV	0,324[a]	0,747
RP	0,461[a]	0,788
HI	0,577[a]	0,780
TA	0,553[a]	0,817
KI	0,825	0,896

[a] *Cronbach alpha <0,70*

TABLE V. Coefficient value path and p-value

Hypothesis	Path	β
Hypothesis 1	AV → TA	0,083
Hypothesis 2	RP → TA	0,182**
Hypothesis 3	HI → TA	0,436**
Hypothesis 4	TA → KI	0,241**

N = 316
(** significance 0.05)

TABLE VI. The effect size for path coefficients

Hypothesis	Path	*Effect Size*	Note
Hypothesis 1	AV → TA	0,012	Very weak
Hypothesis 2	RP → TA	0,056	Weak
Hypothesis 3	HI → TA	0,211	Weak
Hypothesis 4	TA → KI	0,058	Weak

TABLE VII. Summary of the results of the mediation exploration test using the VAF

Variable	Path	
	Technical Anomalies	Investment Performance
Direct		
Availability (AV)		-0,069
R^2		0,005

Representativeness (RP)		0,191***
R^2		0,042
Hindsight (HI)		0,094***
R^2		0,013
Mediating		
Availability (AV)	0,083	0,020
Technical Anomalies		0,241***
R^2	0,012	0,058
Representativeness (RP)	0,182***	0,044
Technical Anomalies		0,241***
R^2	0,056	0,058
Hindsight (HI)	0,436***	0,105
Technical Anomalies		0,241***
R^2	0,221	0,058
Calculation of VAF		
Indirect effect	0,083x 0,241	0,020
Direct effect (AV-TA-KI)		-0,069
Total effect (AV-KI)		-0,049
VAF for AV-TA-KI	**0,020/-0,049**	**0,40 Not Mediated**
Indirect effect	0,182x 0,241	0,044
Direct effect (RP-TA-KI)		0,191
Total effect (RP-KI)		0,235
VAF for RP-TA-KI	**0,044 / 0,235**	**0,18 Not Mediated**
Indirect effect	0,436x 0,241	0,105
Direct effect (HI-TA-KI)		0,094
Total effect (HI-KI)		0,199
VAF for HI-TA-KI	**0,105 / 0,199**	**0,527 Partial**

N = 319
* significant at 0.05 level
** significant at 0.01 level
*** significant at the 0.001 level
+significant at 0.10 level

The results of the mediation exploration carried out prove that the technical anomalies variables formed by the heuristic behavior of investors can partially mediate the relationship between hindsight behavior and investment performance. On the other hand, technical anomalies cannot explain the relationship between availability and representativeness behavior on investment performance. The results of this mediation export can provide input for future research to examine more deeply about the mediation of this technical anomalies.

V. DISCUSSION

Based on the tests that have been carried out, the beta value for the AV → TA pathway is 0.083 (positive) but not significant. The non-significance of this path causes hypothesis 1 to be unsupported. The main assumption of the researcher regarding why this hypothesis is not supported is because even though male investors use technical analysis more often, they are more overconfident because they feel they have information and prefer risk than women [10] Which one. The act of buying shares in the capital market must also of course reconsider the current market conditions. As in practice, if market conditions are deteriorating, usually most investors refrain from making transactions and this incident makes the availability of information not affect the formation of technical anomalies in the capital market.

The support of hypothesis 2 confirms the findings of [9] who found a positive influence of representativeness on the occurrence of technical anomalies in the capital market. The support for this hypothesis also provides support for the study of [6] which found that men trade stocks more often than women, this is driven by a high sense of self-confidence and the tendency of a male investor to only try two to three times. transact in the market and everything brings good results then the person concludes that investing in the capital market must be profitable and that excessive self-confidence causes them to trade stocks more often.

The proof of the third hypothesis also proves that hindsight is also one of the factors that can cause technical anomalies in the capital market. someone who often trades in the stock market, and supports the statement of [11] which states that most investors use technical analysis in making their investment decisions. The support of this hypothesis 4 confirms the findings of [11] which proves that investors who conduct analysis before buying or selling shares using technical analysis will be satisfied with the rate of return they generate and supports the findings of [19] who found that individual investors get abnormal returns on the presence of anomalies in the capital market.

The results of the mediation exploration carried out prove that the technical anomalies variables formed by the heuristic behavior of investors can partially mediate the relationship between hindsight behavior and investment performance. On the other hand, technical anomalies cannot explain the relationship between availability and representativeness behavior on investment performance.

VI. CONCLUSION

This study observes the heuristic behavior of male investors who are divided into three heuristic groups, namely availability (the tendency of a person to rely on only available information in making decisions), representativeness (tendency to take shortcuts in drawing conclusions by assuming that something he faces represents certain groups even though the group is not necessarily represented) and hindsight (the tendency of a person to feel that an event can be

predicted in advance just by looking at the last event that happened to him) [14].

Of the four hypotheses proposed, only one hypothesis is not supported, namely hypothesis 1 which reads that the availability heuristics owned by investors have a positive effect on the occurrence of technical anomalies in the capital market. Furthermore, the results of mediation exploration support the findings of [9] namely the technical anomalies variables formed as a result of heuristic behavior of investors can partially mediate the relationship between hindsight behavior and investment performance. On the other hand, technical anomalies cannot explain the relationship between availability and representativeness behavior on investment performance. This study also proves that the technical anomalies formed by the heuristic behavior of male investors have a positive effect on their investment performance, in other words male investors are able to take advantage of anomalies in the capital market in the right way so that they are satisfied with their investment performance. This finding supports previous studies which found that male investors tend to be satisfied with their investment performance [10]; [11].

The results of the mediation exploration carried out prove that the technical anomalies variables formed by the heuristic behavior of investors can partially mediate the relationship between hindsight behavior and investment performance. On the other hand, technical anomalies cannot explain the relationship between availability and representativeness behavior on investment performance. The results of this mediation export can provide input for future research to examine more deeply about the mediation of this technical anomalies. The last limitation is that this research only uses one method to test the research model, namely by using the survey method. The survey method has a weakness in internal validity or in other words the researcher is unable to control other factors that have the possibility of influencing the variables used. So for future research can use additional methods to strengthen research results. In addition, this study only focuses on male investors. In the future, it is recommended to conduct more comprehensive research by comparing the behavior of female and male investors at the same time.

REFERENCES

[1]. I. Tauni, HongXing, "Qualitative Research in Financial Markets Article information : Information Sources and Trading Behavior : Does Investor Personality Matter ? Abstract," 2016.

[2]. D. Duxbury, "Behavioral finance: insights from experiments II: biases, moods and emotions," *Rev. Behav. Financ.*, vol. 7, no. 2, pp. 151–175, 2015, doi: 10.1108/RBF-09-2015-0037.

[3]. J. M. Prosad, S. Kapoor, and J. Sengupta, *Behavioral biases of Indian investors: a survey of Delhi-NCR region*, vol. 7, no. 3. 2015.

[4]. H. H. Khan, I. Naz, F. Qureshi, and A. Ghafoor, "Heuristics and stock buying decision: Evidence from Malaysian and Pakistani stock markets," *Borsa Istanbul*

[5]. S. Z. ul Abdin, O. Farooq, N. Sultana, and M. Farooq, "The impact of heuristics on investment decision and performance: Exploring multiple mediation mechanisms," *Res. Int. Bus. Financ.*, vol. 42, pp. 674–688, 2017, doi: 10.1016/j.ribaf.2017.07.010.

[6]. T. Quarterly, "Boys Will be Boys : Gender , Overconfidence , and Common Stock Investment Author (s): Brad M . Barber and Terrance Odean Published by : Oxford University Press," *New York*, vol. 116, no. 1, pp. 261–292, 2011, doi: 10.1093/rfs/hhm079.

[7]. N. Loukil, O. Yousfi, and R. Yerbanga, "Does gender diversity on boards influence stock market liquidity? Empirical evidence from the French market," *Corp. Gov.*, vol. 19, no. 4, pp. 669–703, 2019, doi: 10.1108/CG-09-2018-0291.

[8]. K. D. Lahtinen, "Motivating gender use in financial research: a survey of recent literature," *Rev. Behav. Financ.*, vol. 12, no. 3, pp. 242–258, 2019, doi: 10.1108/RBF-06-2018-0056.

[9]. M. Lazuarni, Shafiera and Asri, "Does Heuristic Behavior Leave Anomalies in the Capital Market?," *J. Indones. Econ. Bus.*, vol. 34, no. 3, pp. 217–228, 2020, doi: 10.22146/jieb.45652.

[10]. A. Ising, *Pompian, M. (2006): Behavioral Finance and Wealth Management – How to Build Optimal Portfolios That Account for Investor Biases*, vol. 21, no. 4. 2007.

[11]. I. Luděk Benada, B. A. Vukman, and M. Brno, *Investments Based on Technical Analysis*, no. February. 2017.

[12]. E. F. Fama, "Efficient Capital Markets: A Review of Theory and EmpiricalWork," *J. Finance*, vol. 25, no. 2, pp. 383–417, 1970, doi: 10.1111/j.1540-6261.1970.tb00518.x.

[13]. Tversky, A., Kahneman, D. 1974. "Judgment Under Uncertainty: Heuristics and Biases. Science, Vol 185, No 415, 1124–1131.

[14]. Asri, Marwan. 2015. Keuangan Keperilakuan. Yogyakarta: BPFE

[15]. Bodie Z, Kane A, Marcus A. J. 2009. Investments: Edisi Kedelapan. USA: McGraw Hill.

[16]. Sahi, S.K, Arora, A.P, Dhameja Nand. 2013. "An Exporatory Inquiry into the Psychological Biases in Financial Investment Behavior". The Journal of Behavioral Finance, No 14, 94-103

[17]. Baron, R. M dan Kenny. 1986. "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations". Journal of Personality and Social Psychology, Vol 51, No 6, 1173-1182.

[18]. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Rstedt, M. S. 2014. A Primer on Partial Least Square Structural Equation Modeling. London: Sage Publication.

[19]. Kaniel, R., Liu, S., Saar, G., Titman, S. 2012. "Individual Investor Trading and Return Patterns Around Earnings Announcements". Journal Finance, Vol 67, No 2, 639–680.